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NFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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Part of the training courses for Hungarian civil—defense specialists dealt with the construction of bunkers or various shelters and installations to be used in the event of air attacks, as follows:

- BGS (Bomba-Gas és Szilankbiztos ovohely, bunker for protection against bombs, gas and fragments). There are two types of BGS, as follows:
 - a. Surface type (see sketch). Bunkers of this type have an electric power generator, which is put into operation only when there is a failure in the external power supply. There are two water conduits, one independent of the other; barrels are provided for a reserve. An air renewal device supplies 1,200 liters of air per minute. This type of bunker is designed to withstand the impact of a 1,000-kilogram bomb dropped from an altitude of 1,000 meters, even in the case of a direct hit. According to the tests to which it has been subjected, this type of shelter is as resistant as an underground shelter, but its construction is not undertaken except in places where a combination of certain favorable conditions occurs, e.g., where there is a foundation of rocks.

 Surface shelters are preferable to 25X1 underground shelters. Moreover, surface shelters are less expensive.
 - b. Underground type. Underground shelters are of different types. Mines a rocky walls are particularly favorable to their construction. Particular attention will be devoted to providing emergency exits.
- 2. TGS (Tormelek-Gas & Szilank-biztos ovohely, Bunker for protection against land-slides, gas, and fragments). There are two types of TGS, a public one and one reprivate dwellings. The characteristics of the public type are as follows: wall thickness -- stone, 60 centimeters; brick, 50; reinforced concrete, 25; and ordinary concrete, 35; roof thickness -- monolithic reinforced concrete, 15 centimeters. The other type of TGS is built in the cellars of private homes. In these cases, the roofs are reinforced.
- 3. GS (Gas és Szilankbitztos ovohely, Bunker for protection against gas and fragments). There are two types of GS: one, known as "emergency" type, is built in factories; the other, which is built underground and has an emergency roof, affords protection against fragments and blast effects.

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- 4. Emergency station, built on the TGS model. It includes the following facilities:
 - a. An entry filter (for gas)
 - b. An exit passageway
 - c. Two dressing rooms for men
 - d. Two dressing rooms for women
 - e. Showers for women
 - f. Showers for men
 - g. Electric generators and storage batteries
 - h. Air renewal device
 - i. Room for medical examinations
 - j. Sterilizer
 - k. Operating room
 - 1. Isolation room for patients suffering from nervous shock
 - m. Sick room for men
 - n. Sick room for women
 - o. Room for doctors and medical assistants
- 5. Emergency station, built on the TGS model and similar to the station described above, except that in place of the showers and dressing rooms it has a second operating room and a first-aid room.
- 6. Temporary emergency station set up in pharmacies and private buildings to care for persons who are not seriously injured.

Legend for Sketch (Attachment to this report) of BGS Surface-Type Bunker:

- 1. 20 centimeters of reinforced concrete (350 kilograms of cement per cubic meter of sand). **Protection:** 400 kilograms of 8-mm iron bars, arranged in the form of grill with 5x5-mm mesh.
- 2. Double insulating plates (No. 120 and 150) glued together with bitumen.
- 3. 10 centimeters of reinforced concrete (350 kilograms per cubic meter).
- 4. 6-cm layer of sand.
- 5. 250-cm protective plate consisting of blocks of rock joined together by Portland cement
- 6. Layer of sand.
- 7. 270 centimeters of reinforced concrete (500 kilograms per cubic meter), and 8-mm and 24-mm iron rounds. Beneath the inner coating, the iron bars are arranged in the form of a grill with 5x5-mm mesh.
- 8. Ventilation chambers (60x20x20 centimeters), so arranged as to reduce blast effects. Inner installations, stairways, partitions, etc., are poured (monolithic concrete). It is forbidden to use prefabricated materials.

Note: The figures 200 - 250 - 280 indicate concrete thickness.





